SUMMARY

3.20 A National Problem

A national problem exists because of the accumulation of nuclear wastes. These wastes require special handling, storage, and final disposal to protect the public and the environment from hazards associated with high-levels of radiation.

Why is the accumulation of nuclear wastes a problem?

3.21 Congressional Mandate

The U.S. Congress has decided that the management of our Nation's nuclear wastes is the responsibility of the present generation and should not be left for future generations. Recognizing that a national problem has been created by the accumulation of spent fuel and high-level waste and that a safe and environmentally acceptable method of permanent disposal is needed, the U. S. Congress enacted the Nuclear Waste Policy Act of 1982 (NWPA) and amendments.

What law did Congress pass? Why?

3.22 The Nuclear Waste Policy Act

The NWPA and amendments established a national policy for safely storing, transporting, and disposing of spent nuclear fuel and high-level nuclear waste. The law gave responsibility for carrying out the law to the U.S. Department of Energy (DOE). DOE is required to:

What does the NWPA do?

- site, construct, and operate a deep, mined geologic repository.

In addition, DOE is permitted to:

- site, construct, and operate one monitored retrievable storage (MRS) facility; and
- develop a system for transporting the waste to a repository and MRS facility.

3.23 The Permanent Repository

What is the purpose of site characterization?

The United States began studies for isolating high-level radioactive waste in 1957 when the National Academy of Sciences first recommended deep geologic disposal. In 1987, Congress directed DOE to conduct in-depth site characterization studies at Yucca Mountain, Nevada, to determine whether the site is suitable for development as a geologic repository.

What happens if it is determined that the site is unsuitable?

If, at any time, it is determined that the Yucca Mountain site is unsuitable for development as a repository, all site characterization activities at the site will stop. Congress and the Governor and legislature of Nevada will be notified.

What happens if site characterization indicates the site is suitable?

If site characterization indicates that the Yucca Mountain site is suitable for development as a repository, the law spells out steps that the Secretary of Energy, President, Congress, and the State of Nevada can follow.

What is an MRS facility?

The amended law also directed DOE to site, construct, and operate an MRS facility, subject to certain conditions. For example, the MRS facility cannot be located in Nevada and construction of the MRS facility cannot begin until a repository is authorized by the Nuclear Regulatory Commission. An MRS facility would provide temporary storage for spent fuel from nuclear powerplants until shipment to a repository. In 1989, an independent MRS Review Commission reported to Congress on the contribution an MRS facility would make to managing spent fuel.

3.24 Safe Transportation

What will be done to ensure safe transportation?

Safe transportation is crucial to the management of nuclear waste. Spent fuel casks that must be certified by the Nuclear Regulatory Commission will be used for shipping. Extensive tests are conducted on casks before certification. Existing laws and regulations on shipments enforced by Federal, State, and local agencies will be followed during NWPA shipments. In addition, DOE is developing procedures for inspection, route selection, and other transportation issues in consultation with the affected States, Indian Tribes, local governments, and the public.

3.25 The Challenge of Nuclear Waste Disposal

How are technical challenges related to scientific inquiry?

Planning for the long-range disposal of our Nation's nuclear waste is a complex undertaking that presents many technical and societal challenges. The waste must be kept isolated for very long periods of time. Technical decisions will be based on scientific findings. But in science there are no absolute truths. Honest disagreements among scientists on correct interpretation of data are certain to occur, especially during the early stages of information gathering. Regardless of the ferocity of debate, however, it is important that open discussions take place and opposing views are fairly evaluated.

What societal challenges must be addressed?

Societal challenges must also be addressed. Every human activity involves risk. Important societal questions must be answered as part of the waste management program. Who will be most affected by nuclear waste disposal? What are the potential negative impacts? How can negative impacts be avoided or reduced? Will people affected by the waste management program be compensated? How?

How must decisions be made in our democracy?

Problems of nuclear waste management must be addressed democratically. Legitimate and acceptable decisions must be the product of open and balanced dialogue between Federal, State, Tribal, and local officials as well as the general public.

3.26 Probability and Risk

Every human activity involves some risk. Mowing the lawn, driving a car, flying in a commercial airliner, etc., all present some risk. Nuclear waste disposal is no exception. As with all other activities associated with nuclear power, preventing harm to the public and the environment is a priority. Many steps are taken to reduce public risk from radiation to at most one in a million — a risk much lower than that posed by most human activities, and certainly less than those named above.

Probability is an important tool in determining risk, but it is not the only one. The consequences of an event, as well as human values, are used to decide if a risk is acceptable.